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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/092,678	03/06/2002	William Steven Lanier	59589.000032	5097

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Kevin T. Duncan, Esq.
HUNTON & WILLIAMS
1900 K Street, N.W.
Washington, DC 20006-1109

EXAMINER

SINES, BRIAN J

ART UNIT	PAPER NUMBER
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1743

DATE MAILED: 06/29/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/092,678

Applicant(s)

LANIER ET AL.

Examiner

Brian J. Sines

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-34 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-34 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Claim Objections

Claim 20 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. The claim limitation for claim 20 is recited in claim 12.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1 – 24 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 1 – 24 are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential structural cooperative relationships of elements, such omission amounting to a gap between the necessary structural connections. See MPEP § 2172.01. The omitted structural cooperative relationships are: it is unclear as to how each of the recited features of the claimed apparatus are fluidically connected. For example, how is the sampling device positioned with respect to the chamber. The claims merely recite a listing of features, without adequately describing how each element is interconnected to form an operative apparatus. The recited structure which comprises the device must be clearly and positively specified. The structure must be organized and correlated in such a manner as to present a complete operative device.

Double Patenting

A rejection based on double patenting of the "same invention" type finds its support in the language of 35 U.S.C. 101 which states that "whoever invents or discovers any new and useful process ... may obtain a patent therefor ..." (Emphasis added). Thus, the term "same invention," in this context, means an invention drawn to identical subject matter. See *Miller v. Eagle Mfg. Co.*, 151 U.S. 186 (1894); *In re Ockert*, 245 F.2d 467, 114 USPQ 330 (CCPA 1957); and *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970).

A statutory type (35 U.S.C. 101) double patenting rejection can be overcome by canceling or amending the conflicting claims so they are no longer coextensive in scope. The filing of a terminal disclaimer cannot overcome a double patenting rejection based upon 35 U.S.C. 101.

Claims 1 – 34 are provisionally rejected under 35 U.S.C. 101 as claiming the same invention as that of claims 1 – 34 of copending Application No. 09/682,900. This is a provisional double patenting rejection since the conflicting claims have not in fact been patented.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

1. Claims 1 & 8 – 10 are rejected under 35 U.S.C. 102(b) as being anticipated by Lawson (U.S. Pat. No. 4,073,619). Lawson teaches a method and apparatus for sampling a gas for analysis. Lawson anticipates the claimed monitoring apparatus comprising: a sampling device (sampling probe 15); a chamber (vessel 10 & waste gas duct 14); a means for maintaining an interior chamber temperature (hood 11); at least one sample gas line (e.g., duct 16); a means for removing particulate matter (filter 17); a means for removing water from the sample gas (cooler

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28); and at least one analyzer (e.g., paramagnetic oxygen analyzer 31, infrared analyzers 32 & 33) (see col. 1, line 1 – col. 2, line 53).

2. Claims 1, 2, 8, 10, 12, 16, 20, 22 – 29 & 32 are rejected under 35 U.S.C. 102(b) as being anticipated by Izumi (Sho 51 – 3289). Izumi teaches a method and apparatus for the analysis of nitrogen oxide. Izumi anticipates the claimed monitoring apparatus comprising: a sampling device (sampling probe 2); a chamber (oxidation reaction chamber 16 or pyrolysis reactor 18); a means for maintaining an interior chamber temperature (heating devices 22, 23 & 24); at least one sample gas line (e.g., pipelines 6 & 9); a means for removing particulate matter (dust filter 3); a means for removing water from the sample gas (heating device 23 or 25); and at least one analyzer (e.g., gas-sealed sample cell 20). Izumi teaches maintaining the gas sample at approximately 110 ° C to avoid water condensation problems. Izumi teaches various methods of detection, such as CLA, NDIR, NDUV or electrolysis at a constant potential. Izumi teaches the use of a nitrogen dioxide converter using a molybdenum-based catalyst (see pages 1 – 11; figures 1 – 4).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

1. Claims 6 – 7, 17 & 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Izumi in view of Yamaki et al. (U.S. Pat. No. 4,073,866) (hereinafter “Yamaki”). Izumi does not specifically teach the use of a carbonaceous surface comprising both carbon and molybdenum for converting the nitrogen dioxide gas into nitrogen oxide gas. As discussed above, Izumi does teach the use of a nitrogen dioxide converter using a molybdenum-based catalyst. Yamaki teaches the use of a composite carbide comprising molybdenum for selectively converting nitrogen dioxide in various kinds of gas into nitrogen oxide (see col. 1, line 61 – col. 2, lines 46). Hence, a person of ordinary skill in the art would accordingly have recognized the suitability of utilizing a composite carbide comprising molybdenum and carbon for selectively converting nitrogen dioxide in various kinds of gas into nitrogen oxide. The Courts have held that the selection of a known material, which is based upon its suitability for the intended use, is within the ambit of one of ordinary skill in the art. See *In re Leshin*, 125 USPQ 416 (CCPA 1960) (see MPEP § 2144.07). Therefore, it would have been obvious to a person of ordinary skill in the art to incorporate a carbonaceous surface comprising molybdenum and carbon with the disclosed apparatus and methodology.

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2. Claims 3 – 5, 9, 13 – 15 & 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Izumi as applied to claims 1, 2, 8, 10, 12, 16, 20, 22 – 29 & 32 above, and further in view of Lawson. Izumi does not specifically teach the measurement of other gases. Lawson does teach the concept of measuring the concentration of other gases, such as oxygen, carbon monoxide and carbon dioxide, in a waste gas (see col. 2, lines 34 – 43). Therefore, it would have been obvious to a person of ordinary skill in the art to measure other gas constituents within a stack or waste gas in order to further characterize the gas.

3. Claims 11, 21, 30, 31, 33 & 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Izumi as applied to claims 1, 2, 8, 10, 12, 16, 20, 22 – 29 & 32 above, and further in view of either Matsuda et al. (U.S. Pat. No. 3,977,836) (hereinafter “Matsuda”) or Burrows (U.S. Pat. No. 5,739,038 A). Izumi does not specifically teach the utilization of a span gas. Matsuda teaches a method and apparatus for determining the ammonia concentration of a gas, which incorporates the detection of nitrogen oxide (see Abstract). Matsuda teaches the use of a span gas feeder (see col. 3, line 40 – col. 4, line 64). Burrows further teaches the incorporation of a span gas calibration in a spectrometer gas analyzer system in which nitrogen oxide is detected (see col. 9, line 48 – col.12, line 63). Hence, a person of ordinary skill in the art would have recognized the suitability of incorporating span gas source for facilitating nitrogen oxide detection. Furthermore, as evidenced by both Matsuda and Burrows, a person of ordinary skill in the art would accordingly have had a reasonable expectation for success in incorporating a span gas source. The Courts have held that the prior art can be modified or combined to reject claims as *prima facie* obvious as long as there is a reasonable expectation of success. See *In re Merck & Co., Inc.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986) (see MPEP § 2143.02). Therefore, it

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would have been obvious to a person of ordinary skill in the art to incorporate a span gas source as claimed for facilitating the detection of nitrogen oxides.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The additional cited prior art teach various methods and devices for monitoring stack and flue gases from industrial processes.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian J. Sines, Ph.D. whose telephone number is (571) 272-1263. The examiner can normally be reached on Monday - Friday (11 AM - 8 PM EST).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jill A. Warden can be reached on (571) 272-1267. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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